

## TENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

AOYAMA, Tamotsu  
Aoyama & Partners  
IMP Building  
3-7, Shiromi 1-chome  
Chuo-ku, Osaka-shi  
Osaka 540-0001  
JAPON

Date of mailing (day/month/year)

02 September 1999 (02.09.99)

Applicant's or agent's file reference

661098

## IMPORTANT NOTICE

International application No.

PCT/JP99/00875

International filing date (day/month/year)

25 February 1999 (25.02.99)

Priority date (day/month/year)

27 February 1998 (27.02.98)

Applicant

SAGAMI CHEMICAL RESEARCH CENTER et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
**AU,EP,JP,US**

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:  
**CA,MX**

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
02 September 1999 (02.09.99) under No. WO 99/43802

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

J. Zahra

Telephone No. (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
 United States Patent and Trademark  
 Office  
 Box PCT  
 Washington, D.C.20231  
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 17 November 1999 (17.11.99)	
<b>International application No.</b> PCT/JP99/00875	<b>Applicant's or agent's file reference</b> 661098
<b>International filing date (day/month/year)</b> 25 February 1999 (25.02.99)	<b>Priority date (day/month/year)</b> 27 February 1998 (27.02.98)
<b>Applicant</b> KATO, Seishi et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

02 September 1999 (02.09.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Shinji IGARASHI

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C. 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 27 October 1999 (27.10.99)	
International application No. PCT/JP99/00875	Applicant's or agent's file reference 661098
International filing date (day/month/year) 25 February 1999 (25.02.99)	Priority date (day/month/year) 27 February 1998 (27.02.98)
Applicant KATO, Seishi et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
02 September 1999 (02.09.99)

☐ in a notice effecting later election filed with the International Bureau on:  
\_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Antonia Muller Telephone No.: (41-22) 338.83.38
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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 661098	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP99/00875	International filing date (day/month/year) 25/02/1999	Priority date (day/month/year) 27/02/1998
International Patent Classification (IPC) or national classification and IPC C12N15/12		
Applicant SAGAMI CHEMICAL RESEARCH CENTER et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☒ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  02/09/1999	Date of completion of this report  30.05.2000
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Nichogiannopoulou, A  Telephone No. +49 89 2399 8054 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/JP99/00875

**I. Basis of the report**

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

**Description, pages:**

1-59 as originally filed

**Claims, No.:**

1-6 as originally filed

**Drawings, sheets:**

1/7-7/7 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**see separate sheet**

**II. Priority**

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:

☐ copy of the earlier application whose priority has been claimed.

☐ translation of the earlier application whose priority has been claimed.

2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/JP99/00875

been found invalid.

Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

**see separate sheet**

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 1-6 all partially.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 1-6 all partially.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/JP99/00875

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims 1-6
	No: Claims
Inventive step (IS)	Yes: Claims
	No: Claims 1-6
Industrial applicability (IA)	Yes: Claims 1-6
	No: Claims

**2. Citations and explanations**

**see separate sheet**

**VI. Certain documents cited**

**1. Certain published documents (Rule 70.10)**

and / or

**2. Non-written disclosures (Rule 70.9)**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/JP99/00875

**Re Item I**

**Basis of the report**

1. This report was established based on the application documents and the written sequence listing pages 1/27-27/27.

**Re Item II**

**Priority**

1. The present application appears to validly claim priority from 27.02.1998. Any documents cited in the International Search Report as P documents have therefore not been considered as comprised in the prior art relevant for the present application.

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. An International Search has only been carried out on the protein and cDNA sequences of clone HP01434 (SEQ ID NOs:1, 8, 15), (see Form PCT/ISA/210). Accordingly, all other clones and sequences need not be the subject of International Preliminary Examination (Rule 66 1(e) PCT). Hence claims 1-6 will be examined partially.



**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Novelty (Article 33(2) PCT)**

The present application discloses human transmembrane proteins, cloned from a cDNA library.

The subject matter of claims 1-6 appears novel since the complete SEQ ID NOs: 1, 8 and 15 have not been disclosed in the available prior art.

**2. Inventive step (Article 33(3) PCT)**

Due to the fact that no function has been established for the protein encoded by clone HP01434, the claimed sequences are not associated with any known technical effect. Accordingly, the only underlying technical problem that can be recognised is the provision of further transmembrane proteins and the cDNAs encoding such. To establish inventive activity, the provision of a sequence must be justified by the technical purpose, i.e. by a hitherto unknown or unexpected technical effect, caused by those technical features which distinguish the claimed molecules from numerous other ones. Due to the absence of any disclosed function or technical effect, the provision of the present sequences amounts to nothing more than an arbitrary selection. Consequently, the claimed proteins and nucleic acids as well as vectors and host cells relating to them (claims 1-6) are considered to lack an inventive step, pursuant to Article 33(3) PCT.

**3. Industrial applicability (Article 33(4) PCT)**

In so far as the present specification is completely silent with regard to the function of the protein encoded by clone HP01434, the possible fields of application for the claimed protein and polynucleotides suggested in the specification are merely speculative. Thus it is questionable whether the claimed subject-matter actually meets the requirements set forth in Article 33(4) PCT.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/JP99/00875

**Re Item VI**

**Certain documents cited**

1. Certain published documents (Rule 70.10)

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date ( <i>valid claim</i> ) (day/month/year)
WO 98 54963	10.12.98	04.06.98	06.06.97

2. WO 98 54963 has been published after the priority date of the present application and does therefore not constitute prior art in the meaning of Rule 64(1)(b) PCT. Said document will, however become of relevance for novelty assessment should the application enter the European phase.

## PCT COOPERATION TREATY

PCT

NOTIFICATION OF RECEIPT OF  
RECORD COPY

(PCT Rule 24.2(a))



From the INTERNATIONAL BUREAU

To:

AOYAMA, Tamotsu  
Aoyama & Partners  
IMP Building  
3-7, Shiromi 1-chome  
Chuo-ku, Osaka-shi  
Osaka 540-0001  
JAPON

Date of mailing (day/month/year) 24 March 1999 (24.03.99)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference 661098	International application No. PCT/JP99/00875

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

SAGAMI CHEMICAL RESEARCH CENTER et al (for all designated States except US)  
KATO, Seishi et al (for US)

International filing date : 25 February 1999 (25.02.99)

Priority date(s) claimed : 27 February 1998 (27.02.98)

Date of receipt of the record copy  
by the International Bureau : 12 March 1999 (12.03.99)

List of designated Offices :

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
National : AU, CA, JP, MX, US

**ATTENTION**

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- ☒ time limits for entry into the national phase
- ☒ confirmation of precautionary designations
- ☒ requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

K. Takeda

Telephone No. (41-22) 338.83.38

## PCT COOPERATION TREATY

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

From the INTERNATIONAL BUREAU

To:

AOYAMA, Tamotsu  
Aoyama & Partners  
IMP Building  
3-7, Shiromi 1-chome  
Chuo-ku, Osaka-shi  
Osaka 540-0001  
JAPON

Date of mailing (day/month/year) 20 April 1999 (20.04.99)	
Applicant's or agent's file reference 661098	<b>IMPORTANT NOTIFICATION</b>
International application No. PCT/JP99/00875	International filing date (day/month/year) 25 February 1999 (25.02.99)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 27 February 1998 (27.02.98)
Applicant SAGAMI CHEMICAL RESEARCH CENTER et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
27 Febr 1998 (27.02.98)	10/46607	JP	16 Apr 1999 (16.04.99)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. (41-22) 740.14.35	Authorized officer  Juan Cruz  Telephone No. (41-22) 338.83.38
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PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

661098



## Box No. I TITLE OF INVENTION

HUMAN PROTEINS HAVING TRANSMEMBRANE DOMAINS AND DNAs ENCODING THESE PROTEINS

## Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SAGAMI CHEMICAL RESEARCH CENTER

4-1, Nishi-Ohnuma 4-chome,  
Sagamihara-shi, Kanagawa 229-0012 JAPAN

☐ This person is also inventor.

Telephone No. 0427-42-4692

Facsimile No. 0427-66-2846

Teleprinter No.

State (that is, country) of nationality:

Japan

State (that is, country) of residence:

Japan

This person is applicant  
for the purposes of:

☐ all designated  
States

☒ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

## Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PROTEGENE INC.

2-20-3, Naka-cho, Meguro-ku,  
Tokyo 153-0065 JAPAN

This person is:

☒ applicant only

☐ applicant and inventor

☐ inventor only (If this check-box  
is marked, do not fill in below.)

State (that is, country) of nationality:

Japan

State (that is, country) of residence:

Japan

This person is applicant  
for the purposes of:

☐ all designated  
States

☒ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

## Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

6214 Patent Attorney AOYAMA Tamotsu  
6852 Patent Attorney TAMURA Yasuo  
6703 Patent Attorney IWASAKI Mitsutaka

Aoyama & Partners, IMP Building, 3-7,  
Shiromi 1-chome, Chuo-ku, Osaka-shi,  
Osaka 540-0001 JAPAN

Telephone No.

06-6949-1261

Facsimile No.

06-6949-0361

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

KATO Seishi

3-46-50, Wakamatsu,  
Sagamihara-shi, Kanagawa 229-0014 JAPAN

This person is:

☐ applicant only☒ applicant and inventor☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality: Japan

State (that is, country) of residence: Japan

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SEKINE Shingo

Remonzu 101, 2-8-15, Atago,  
Ageo-shi, Saitama 362-0034 JAPAN

This person is:

☐ applicant only☒ applicant and inventor☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality: Japan

State (that is, country) of residence: Japan

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

KIMURA Tomoko

302,4-1-28, Nishiikuta, Tama-ku,  
Kawasaki-shi, Kanagawa 214-0037 JAPAN

This person is:

☐ applicant only☒ applicant and inventor☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality: Japan

State (that is, country) of residence: Japan

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

NAKAMURA Nobuko

2-20-6, Kozonominami,  
Ayase-shi, Kanagawa 252-1122 JAPAN

This person is:

☐ applicant only☒ applicant and inventor☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality: Japan

State (that is, country) of residence: Japan

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

**Box No.V DESIGNATION OF STATES**

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

**Regional Patent**

- ☐ **AP** ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ **EA** Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP** European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA** OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line) .....

**National Patent (if other kind of protection or treatment desired, specify on dotted line):**

- |  |  |
|--|--|
| <input type="checkbox"/> <b>AL</b> Albania .....                               | <input type="checkbox"/> <b>LS</b> Lesotho .....                                   |
| <input type="checkbox"/> <b>AM</b> Armenia .....                               | <input type="checkbox"/> <b>LT</b> Lithuania .....                                 |
| <input type="checkbox"/> <b>AT</b> Austria .....                               | <input type="checkbox"/> <b>LU</b> Luxembourg .....                                |
| <input checked="" type="checkbox"/> <b>AU</b> Australia .....                  | <input type="checkbox"/> <b>LV</b> Latvia .....                                    |
| <input type="checkbox"/> <b>AZ</b> Azerbaijan .....                            | <input type="checkbox"/> <b>MD</b> Republic of Moldova .....                       |
| <input type="checkbox"/> <b>BA</b> Bosnia and Herzegovina .....                | <input type="checkbox"/> <b>MG</b> Madagascar .....                                |
| <input type="checkbox"/> <b>BB</b> Barbados .....                              | <input type="checkbox"/> <b>MK</b> The former Yugoslav Republic of Macedonia ..... |
| <input type="checkbox"/> <b>BG</b> Bulgaria .....                              | <input type="checkbox"/> <b>MN</b> Mongolia .....                                  |
| <input type="checkbox"/> <b>BR</b> Brazil .....                                | <input type="checkbox"/> <b>MW</b> Malawi .....                                    |
| <input type="checkbox"/> <b>BY</b> Belarus .....                               | <input checked="" type="checkbox"/> <b>MX</b> Mexico .....                         |
| <input checked="" type="checkbox"/> <b>CA</b> Canada .....                     | <input type="checkbox"/> <b>NO</b> Norway .....                                    |
| <input type="checkbox"/> <b>CH and LI</b> Switzerland and Liechtenstein .....  | <input type="checkbox"/> <b>NZ</b> New Zealand .....                               |
| <input type="checkbox"/> <b>CN</b> China .....                                 | <input type="checkbox"/> <b>PL</b> Poland .....                                    |
| <input type="checkbox"/> <b>CU</b> Cuba .....                                  | <input type="checkbox"/> <b>PT</b> Portugal .....                                  |
| <input type="checkbox"/> <b>CZ</b> Czech Republic .....                        | <input type="checkbox"/> <b>RO</b> Romania .....                                   |
| <input type="checkbox"/> <b>DE</b> Germany .....                               | <input type="checkbox"/> <b>RU</b> Russian Federation .....                        |
| <input type="checkbox"/> <b>DK</b> Denmark .....                               | <input type="checkbox"/> <b>SD</b> Sudan .....                                     |
| <input type="checkbox"/> <b>EE</b> Estonia .....                               | <input type="checkbox"/> <b>SE</b> Sweden .....                                    |
| <input type="checkbox"/> <b>ES</b> Spain .....                                 | <input type="checkbox"/> <b>SG</b> Singapore .....                                 |
| <input type="checkbox"/> <b>FI</b> Finland .....                               | <input type="checkbox"/> <b>SI</b> Slovenia .....                                  |
| <input type="checkbox"/> <b>GB</b> United Kingdom .....                        | <input type="checkbox"/> <b>SK</b> Slovakia .....                                  |
| <input type="checkbox"/> <b>GE</b> Georgia .....                               | <input type="checkbox"/> <b>SL</b> Sierra Leone .....                              |
| <input type="checkbox"/> <b>GH</b> Ghana .....                                 | <input type="checkbox"/> <b>TJ</b> Tajikistan .....                                |
| <input type="checkbox"/> <b>GM</b> Gambia .....                                | <input type="checkbox"/> <b>TM</b> Turkmenistan .....                              |
| <input type="checkbox"/> <b>GW</b> Guinea-Bissau .....                         | <input type="checkbox"/> <b>TR</b> Turkey .....                                    |
| <input type="checkbox"/> <b>HR</b> Croatia .....                               | <input type="checkbox"/> <b>TT</b> Trinidad and Tobago .....                       |
| <input type="checkbox"/> <b>HU</b> Hungary .....                               | <input type="checkbox"/> <b>UA</b> Ukraine .....                                   |
| <input type="checkbox"/> <b>ID</b> Indonesia .....                             | <input type="checkbox"/> <b>UG</b> Uganda .....                                    |
| <input type="checkbox"/> <b>IL</b> Israel .....                                | <input checked="" type="checkbox"/> <b>US</b> United States of America .....       |
| <input checked="" type="checkbox"/> <b>JP</b> Japan .....                      | <input type="checkbox"/> <b>UZ</b> Uzbekistan .....                                |
| <input type="checkbox"/> <b>KE</b> Kenya .....                                 | <input type="checkbox"/> <b>VN</b> Viet Nam .....                                  |
| <input type="checkbox"/> <b>KG</b> Kyrgyzstan .....                            | <input type="checkbox"/> <b>YU</b> Yugoslavia .....                                |
| <input type="checkbox"/> <b>KP</b> Democratic People's Republic of Korea ..... | <input type="checkbox"/> <b>ZW</b> Zimbabwe .....                                  |
| <input type="checkbox"/> <b>KR</b> Republic of Korea .....                     |  |
| <input type="checkbox"/> <b>KZ</b> Kazakhstan .....                            |  |
| <input type="checkbox"/> <b>LC</b> Saint Lucia .....                           |  |
| <input type="checkbox"/> <b>LK</b> Sri Lanka .....                             |  |
| <input type="checkbox"/> <b>LR</b> Liberia .....                               |  |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☐ .....
- ☐ .....

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

<b>Box No. VI PRIORITY CLAIM</b>					<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:			
		national application: country	regional application:* regional Office	international application: receiving Office	
item (1)  27.02.98	Patent Application No. 10-46607	JP			
item (2)					
item (3)					

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): <b>ISA / E P</b>	Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year)      Number      Country (or regional Office)
--	---

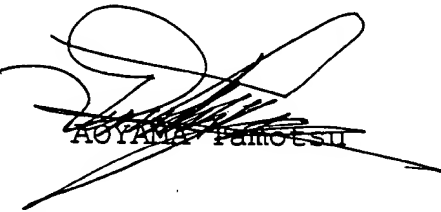
**Box No. VIII CHECK LIST; LANGUAGE OF FILING**

This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 59 claims : 1 abstract : 1 drawings : 7 sequence listing part of description : 27 Total number of sheets : 99	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input checked="" type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input checked="" type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): Request for Transmittal of Priority Document
--	--

Figure of the drawings which should accompany the abstract:	Language of filing of the international application: <b>E n g l i s h</b>
---	---

**Box No. IX SIGNATURE OF APPLICANT OR AGENT**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

  
 ROYAMA Fumio

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): <b>ISA / E P</b>	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only
Date of receipt of the record copy by the International Bureau:



## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>661098</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/JP 99/00875</b>	International filing date (day/month/year) <b>25/02/1999</b>	(Earliest) Priority Date (day/month/year) <b>27/02/1998</b>
Applicant <b>SAGAMI CHEMICAL RESEARCH CENTER et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.



Certain claims were found unsearchable (See Box I).

3.



Unity of invention is lacking (see Box II).

## 4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP 99/00875

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see FURTHER INFORMATION sheet, subject 1.

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

1. Claims: (1-6) - partial

Proteins containing the amino acid sequece of seq. ID 1.

Corresponding cDNAs (seq. IDs 8,15), vectors, transformed eucaryotic cells.

2. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 2,9,17.

3. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 3,10,19.

4. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 4,11,21.

5. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 5,12,23.

6. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 6,13,25.

7. Claims: (1-6) - partial

Idem as subject matter 1 but limited to seq. IDs 7,14,27.

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/12 C12N5/10 C07K14/705

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 98 54963 A (FERRIE ANN M; HUMAN GENOME SCIENCES INC ; GREENE JOHN M (US); YOUNG) 10 December 1998 see abstract sequence of gene 23 / clone HSQE084 (Human ortholog of mouse FKBP23): 100% identical to seq. ID 1 (aa 1-120). see abstract  --- -/--	1-6

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## ° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

15 July 1999

Date of mailing of the international search report

03. 11. 1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Galli, I

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE SEQUENCES  EMBL, Heidelberg, FRG  Accession No. AF040252, 3 February 1998  NAKAMURA T. ET AL.: "Mouse FK-506 binding protein (FKBP23)"  XP002109279  amino acids 1-138 are 85.8% identical to  seq. ID 1.  see abstract  &amp; NAKAMURA T. ET AL.: "Molecular cloning, characterization and chromosomal localization of FKBP23, a novel FK506-binding protein with Ca<sup>2+</sup>-binding ability."  GENOMICS,  vol. 54, no. 1, November 1998,  pages 89-98,</p>	1-6
X	<p>---  DATABASE GENBANK  Accession No. AA457921, 6 June 1997  MARRA M. ET AL.: "EST; mouse cDNA clone IMAGE:849512 similar to FK506-binding protein precursor"  XP002109280  the sequence encodes amino acids 24-100 of seq. ID 1 (93.9% identity)  see abstract</p>	1-6
A	<p>---  WO 95 34641 A (SCRIPPS RESEARCH INST) 21 December 1995  see abstract  see abstract; examples 1-4  see abstract; claims 1-47; examples 1-4</p>	1-6
A	<p>---  WO 93 23548 A (VERTEX PHARMA) 25 November 1993  see abstract; claims 1-47; examples 1-4</p>	1-6
A	<p>---  WO 95 00633 A (CHILDRENS MEDICAL CENTER ;UNIV LELAND STANFORD JUNIOR (US)) 5 January 1995  see abstract; claims 1-47; examples 1-4</p> <p>-----</p>	1-6

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 99/00875

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9854963	A	10-12-1998	AU 7812098	A	21-12-1998
			AU 7811998	A	21-12-1998
			AU 6552198	A	29-09-1998
			WO 9840483	A	17-09-1998
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WO 9534641	A	21-12-1995	AU 2773595	A	05-01-1996
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WO 9323548	A	25-11-1993	AU 4388893	A	13-12-1993
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WO 9500633	A	05-01-1995	US 5486599	A	23-01-1996
			AU 7112994	A	17-01-1995
			EP 0705332	A	10-04-1996
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